

NON-PUBLIC?: N  
ACCESSION #: 8901190402  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: PLANT VOGTLE - UNIT 1 PAGE: 1 OF 3

DOCKET NUMBER: 05000424

TITLE: ESF AND RPS ACTUATIONS DUE TO BYPASS FEEDWATER  
REGULATIONS VALVE  
COMPONENT FAILURES  
EVENT DATE: 12/17/88 LER #: 88-044-00 REPORT DATE: 01/03/89

OPERATING MODE: 2 POWER LEVEL: 004

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: J. E. SWARTZWELDER, NUCLEAR SAFETY AND COMPLIANCE  
MANAGER  
TELEPHONE: (404)826-3618

COMPONENT FAILURE DESCRIPTION:  
CAUSE: B SYSTEM: SJ COMPONENT: PC MANUFACTURER: F130  
REPORTABLE TO NPRDS:

COMPONENT FAILURE DESCRIPTION:  
CAUSE: B SYSTEM: SJ COMPONENT: LSV MANUFACTURER: A609  
REPORTABLE TO NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT: On December 17, 1988, ESF and RPS actuations occurred during power ascension activities.

At 4 percent power, the steam generator (SG) water supply was switched from the Auxiliary Feedwater (AFW) system to the Main Feedwater (FW) system. The FW system's Bypass Feedwater Regulating Valve (BFRV) for SG #1 opened normally but did not properly regulate feedwater flow. Water level increased in SG #1 until the high-high level setpoint was reached at 0114 CST. This initiated a FW isolation and an AFW actuation. An investigation found a malfunctioning BFRV volume booster which was replaced and tested prior to resumption of power ascension.

At 16 percent power, the same BFRV unexpectedly closed, causing SG #1 water level to drop rapidly. The reactor operator initiated a manual reactor trip at 1742 CST, when it became apparent that water level could not be recovered. All rods inserted, FW isolated and AFW actuated to restore and control SG water levels. An investigation found a malfunctioning solenoid valve which controls the closing of the BFRV. The solenoid valve was replaced.

END OF ABSTRACT

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#### A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(iv) because unplanned RPS and ESF actuations occurred.

#### B. UNIT STATUS AT TIMES OF EVENTS

At the time of the Feedwater Isolation (FWI) on December 17, 1988, at 0114 CST, Unit 1 was in Mode 2 (Startup) at 4 percent rated thermal power (RTP). At the time of the Reactor Trip on December 17, 1988, at 1742 CST, Unit 1 was in Mode 1 (Power Operation) at 16 percent RTP. Other than the valve described herein, there was no inoperable equipment which contributed to the occurrence of this event.

#### C. DESCRIPTION OF EVENTS

On December 17, 1988, ESF and RPS actuations occurred during power ascension activities.

At 4 percent power, the Steam Generator (SG) water supply was switched from the Auxiliary Feedwater (AFW) system to the Main Feedwater (FW) system. The FW system's Bypass Feedwater Regulating Valve (BFRV) for SG #1 opened normally but did not properly regulate feedwater flow. Water level increased in SG #1 until the high-high level setpoint was reached at 0114 CST. This initiated a FW isolation and an AFW actuation. No additional significant water level perturbations were experienced. An investigation found a malfunctioning BFRV volume booster which was replaced and tested prior to resumption of power ascension.

At 16 percent power, the same BFRV unexpectedly closed, causing SG #1 water level to drop rapidly. The reactor operator initiated a manual reactor trip at 1742 CST, when it became apparent that water level could not be recovered. All control rods inserted, FW isolated and AFW actuated to restore and control SG water levels. An investigation found a malfunctioning solenoid valve which controls the closing of the BFRV.

#### D. CAUSE OF EVENTS

These events were caused by the component failure of a volume booster and a solenoid valve. The volume booster failure mode could not be determined. The solenoid exhibited an open wiring connection.

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#### E. ANALYSIS OF EVENTS

During the reactor trip, all rods inserted as designed. For each event, the FW system isolated and AFW system actuated to restore and control SG water levels. Also, there were no safety system anomalies noted in the course of these events.

Based on these considerations, it is concluded that there was no adverse effect on plant safety or public health and safety as a result of this event.

#### F. CORRECTIVE ACTIONS

1. The malfunctioning volume booster was replaced prior to power ascension. The solenoid valve was replaced prior to reactor restart.
2. The malfunctioning volume booster will be analyzed in an attempt to determine the failure mode. Actions to prevent recurrence will be based on the results of this analysis which is expected to be completed by April 24, 1989.
3. Solenoid valves in the other BFRV's and in the Main Feedwater Regulating Valves will be inspected when the unit is shutdown.

#### G. ADDITIONAL INFORMATION

##### 1. Failed Components .

Air Volume Booster manufactured by Fisher Controls Co. Type 2625.

Solenoid Valve manufactured by ASCO Electrical Products Catalog No. 94015J-T6.

##### 2. Previous Similar Events

None .

##### 3. Energy Industry Identification System Code:

Main Feedwater System - SJ  
Auxiliary Feedwater System - BA  
Control Rod Drive System - AA

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ELV-00157  
X7GJ17-V310  
0080M

January 13, 1989

U.S. Nuclear Regulatory Commission  
ATTN: Document Control  
Washington, D.C. 20555

NRC DOCKET 50-424  
OPERATING LICENSE NPF - 68  
PLANT VOGTLE - UNIT 1  
LICENSEE EVENT REPORT  
ESF AND RPS ACTUATIONS DUE TO BYPASS  
FEEDWATER REGULATING VALVE COMPONENT FAILURES

Gentlemen:

In accordance with 10 CFR 50.73, Georgia Power Company hereby submits the enclosed report related to events which occurred on December 17, 1988.

Sincerely,  
W. G. Hairston, III  
PAH/llh

Enclosure: LER 50-424/1988-044

cc w/enclosure:  
Georgia Power Company  
Mr. P. D. Rice  
Mr. C. K. McCoy  
Mr. G. Bockhold, Jr.  
Mr. M. Sheibani  
Mr. J. P. Kane  
VOGTLE-NORMS  
GO-NORMS

U.S. Nuclear Regulatory Commission  
Mr. M. L. Ernst, Acting Regional Administrator  
Mr. J. B. Hopkins, Licensing Project Manager, NRR (2 copies)

Mr. J. F. Rogge, Senior Resident Inspector-Operations, Vogtle

\*\*\* END OF DOCUMENT \*\*\*

ACCESSION #: 8901190405

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